The Promise of Big Data Plenary 1

NAPCRG PBRN Conference 2014

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Faculty/Presenter Disclosure

- Faculty: Rick Glazier

- Relationships with commercial interests:
  - **Grants/Research Support:** none
  - **Speakers Bureau/Honoraria:** none
  - **Consulting Fees:** none
  - **Other:** none

Disclosure of Commercial Support

This program has received financial support from N/A in the form of N/A

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<u>Potential for conflict(s) of interest</u>:

- **Rick Glazier** has received **N/A** from **N/A**

- **N/A** a product that will be discussed in this program: **N/A**

Mitigating Potential Bias

- **Mitigation N/A**

Scenario

- A network of clinics has established systems for regular:

  - surveys of patient experience
  - EMR extracts of access and quality of care
  - administrative data profiles comparing them to the province
  - priority setting based on this information

- Last year they used this information to:

  - achieve 70% of visits on the day preferred by their patients
  - double the number of people with smoking cessation support
  - increase continuity of care by 30%
  - demonstrate a 25% reduction in antibiotic use through a randomized trial of delayed prescriptions for respiratory infections

Scenario

- Is this true for your practice setting?
  - conduct surveys of patient experience
  - extract EMR data
  - receive administrative data profiles
  - use data to set priorities

- Last year did you:
  - use practice-based data to improve care?
  - receive feedback about how you compare with others?
  - participate in practice-based research?

Building Primary Care Measures
…from scratch

- Primary care in Canada has little tradition of:
  - routine measures
  - reporting
  - accountability
- But it does have:
  - single payer systems
  - good capture of physician billings
  - ability to link data across health sectors in many provinces
  - a push towards organized groups and accountability
  - increasing data at the regional level
- Practice-level measurement especially limited

Measurement Frameworks
For Systems and Practices

- ## National - CIHI
    - – 105 indictors in 2006
    - – 30 policy, 30 provider in 2012
    - – surveys, EMR, admin data

- ## BC
    - – diabetes, heart failure care reported

- ## ON
    - – PCPM framework, Quality Agenda

Pan-Canadian Primary Health Care Indicator Update Report, 2012
http://www.cihi.ca/CIHI-ext-portal/internet/EN/TabbedContent/types+of+care/primary+health/cihi006583
http://www.primaryhealthcarebc.ca/resource_performance_report.html

Measurement Frameworks – Ontario

Primary Care Performance Measurement Framework
(Ontario Primary Care Performance Measurement Steering Committee, June 2013)
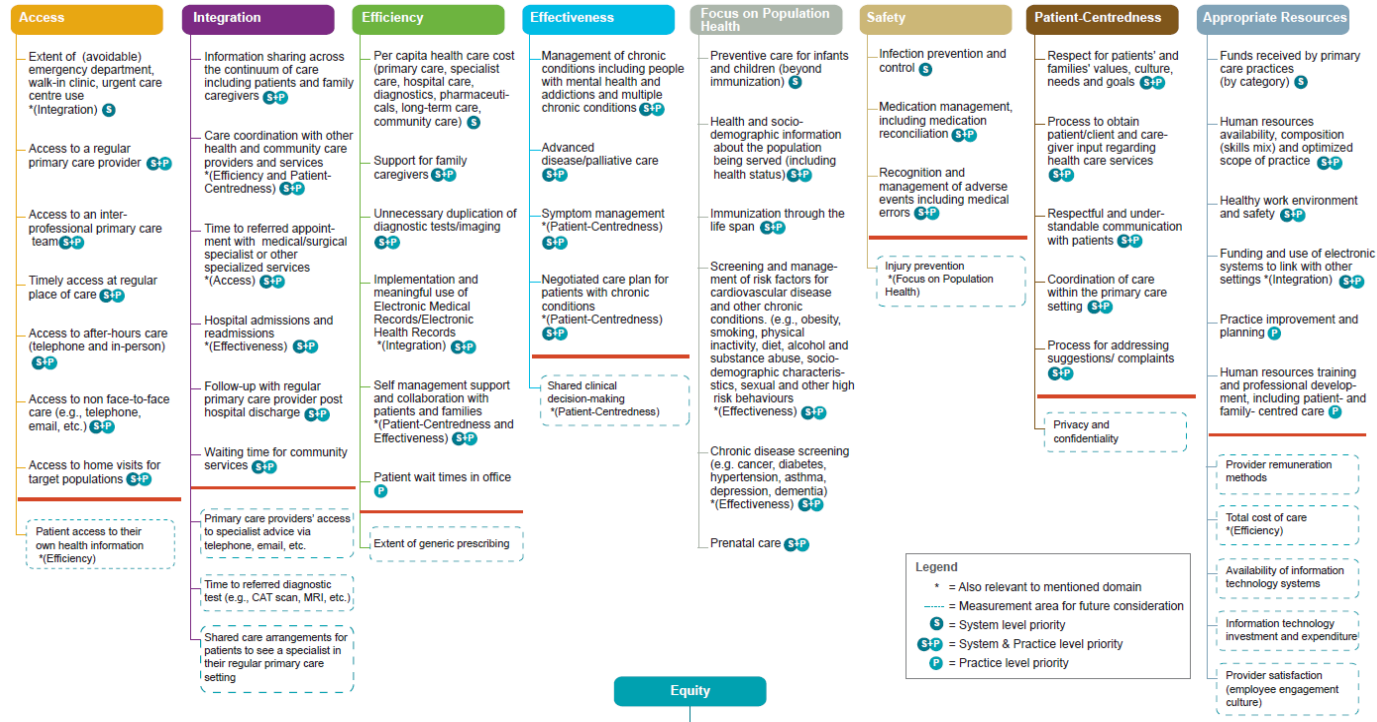
http://www.hqontario.ca/public-reporting/primary-care

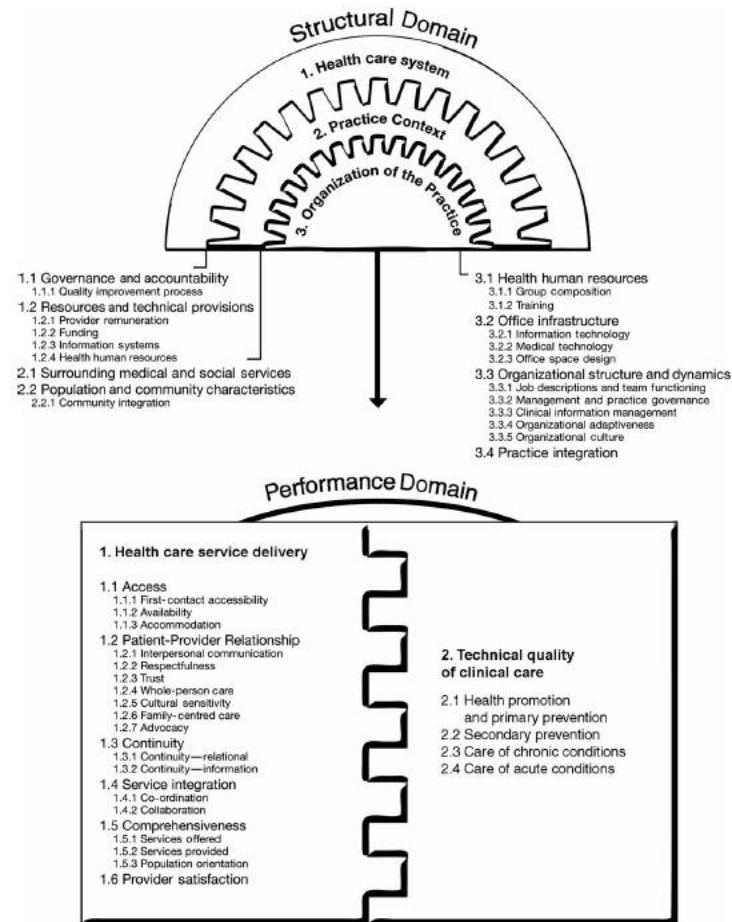# Framework for Primary Care Organizations

Figure 1 Conceptual framework for primary care organizations.

Practice Level Data

- ## Surveys

  – organizations, providers, patients, communities

- ## Administrative data

  – groups and providers

- ## Clinical data

  - electronic medical records (EMR)

- ## Each has its role*

*Green ME et al. Assessing methods for measurement of clinical outcomes and quality of care in primary care practices. BMC Health Services Research 2012, 12:214. http://www.biomedcentral.com/1472-6963/12/214

Practice Surveys

- Patient experiences
  - methods recently reviewed*
  - mandated in some primary care settings
  - local (e.g. ON) or centralized (e.g. UK)

- Not yet standardized
  - sampling and sample size
  - questions
  - analysis and reporting

*Wong ST, Haggerty J. Measuring patient experiences in primary health care: a review and classification of items and scales used in publicly available questionnaries. CHSPR 2013
http://www.chspr.ubc.ca/sites/default/files/publication_files/Patient%20experiences%20in%20PHC%202013_0.pdf

Practice Survey – Example
Monthly Survey by E-mail

7. When you see your physician or nurse practitioner, how often do they or someone else in the office give you an opportunity to ask questions about recommended treatment?

	answered question	154
	skipped question	0

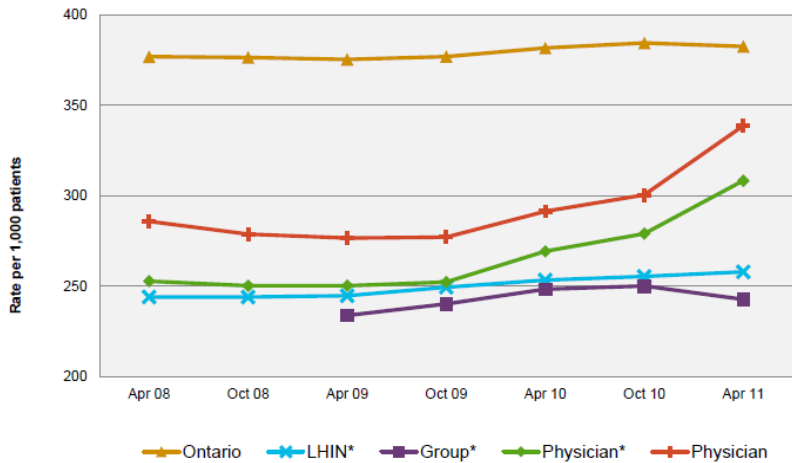|	Response Percent	Response Count
Always	**68.2%**	**105**
Often	18.2%	28
Sometimes	3.9%	6
Rarely	2.6%	4
Never	1.9%	3
It depends on who I see and/or what I am are there for	5.2%	8
Decline to answer	0.0%	0

9. When you see your physician or nurse practitioner, how often do they or someone else in the office involve you as much as you want to be in decisions about your care and treatment?

	answered question	152
	skipped question	2

	Response Percent	Response Count
Always	**64.5%**	**98**
Often	19.1%	29
Sometimes	11.8%	18
Rarely	2.0%	3
Never	0.7%	1
It depends on who I see and/or what I am are there for	1.3%	2
Decline to answer	0.7%	1

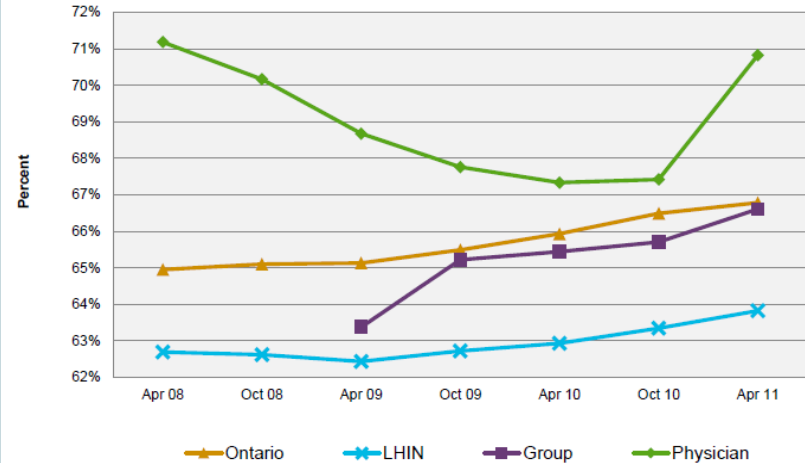# Practice Level Administrative Data
Example from Health Quality Ontario – ICES Initiative

Rate of emergency department visits per 1,000 patients

Legend: Ontario, LHIN*, Group*, Physician*, Physician

Reporting Period	Apr 08	Oct 08	Apr 09	Oct 09	Apr 10	Oct 10	Apr 11
Physician	285.8 (470)	278.8 (453)	276.6 (456)	277.1 (459)	291.3 (484)	300.5 (501)	338.8 (575)
Physician*	252.8 (470)	250.3 (453)	250.3 (456)	252.3 (459)	269.3 (484)	279.0 (501)	308.3 (575)
Group*	DS	DS	233.8 (4,825)	240.2 (5,263)	248.3 (5,480)	250.1 (5,743)	242.7 (4,896)
LHIN*	244.0 (418,481)	244.0 (419,415)	244.8 (430,588)	249.4 (443,530)	253.4 (447,001)	255.5 (455,357)	258.0 (465,414)
Ontario	376.9 (4,849,388)	376.5 (4,864,067)	375.4 (4,853,762)	377.0 (4,918,704)	381.7 (4,985,304)	384.5 (5,033,949)	382.6 (5,035,502)

*Adjusted for age, sex, and morbidity
DS=data suppressed; physician group size <6

Percentage of patients with diabetes with at least one retinal examination within the past 24 months

Legend: Ontario, LHIN, Group, Physician

Reporting Period	Apr 08	Oct 08	Apr 09	Oct 09	Apr 10	Oct 10	Apr 11
Physician	71.18% (85)	70.16% (86)	68.67% (87)	67.76% (88)	67.33% (89)	67.42% (93)	70.83% (102)
Group	DS	DS	63.37% (718)	65.22% (808)	65.44% (832)	65.70% (901)	66.61% (764)
LHIN	62.69% (64,173)	62.62% (67,181)	62.43% (71,427)	62.72% (74,673)	62.93% (76,529)	63.34% (80,444)	63.82% (84,420)
Ontario	64.95% (518,085)	65.10% (541,726)	65.13% (563,385)	65.49% (587,194)	65.93% (609,337)	66.49% (633,174)	66.78% (656,620)

DS=data suppressed; physician group size <6

Practice Level EMR Data

- Data discipline issues

- Multiple vendor issues

- Challenging to run queries

- Provincial and national initiatives – measure and feed back

    - EMRALD

    - Canadian Primary Care Sentinel Surveillance Network (CPCSSN)

    - others

- Examples

    - HbA1c < 7.5%, BP control, Pap smears, flu shots, smoking cessation, obesity
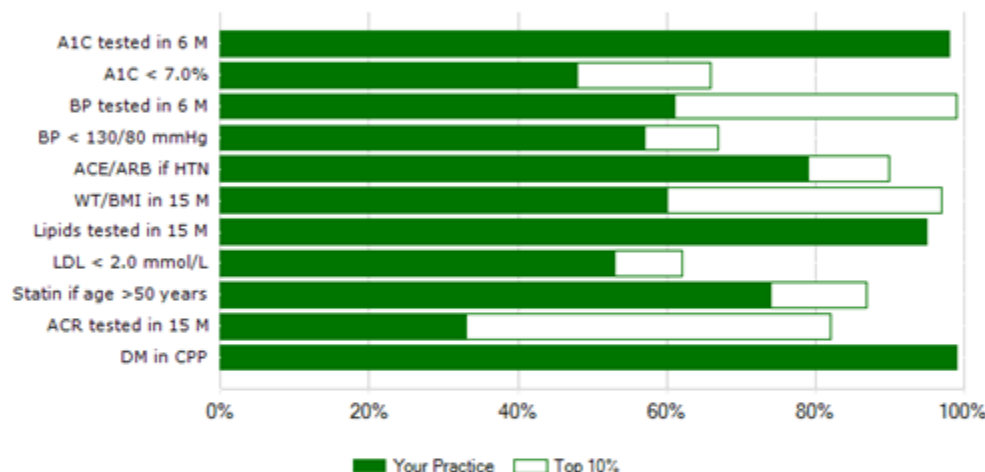
ICES **EMRALD - SAFIRE**

Home

Doctor: (ID:8888)

System for Audit and Feedback to Improve caRE (SAFIRE)

| DM | IHD | HTN | Mainpro-C | FAQ | Contact Us | Data Level: Practice Profile ▼ | Indicator: At Target ▼ | Date: May 25, 2013 ▼ |

Diabetes Care Measures (DM)

Diabetes Care Measures ⓘ | **Patient List:** 📄

A1C tested in 6 M
A1C < 7.0%
BP tested in 6 M
BP < 130/80 mmHg
ACE/ARB if HTN
WT/BMI in 15 M
Lipids tested in 15 M
LDL < 2.0 mmol/L
Statin if age >50 years
ACR tested in 15 M
DM in CPP

0% 20% 40% 60% 80% 100%

■ Your Practice ☐ Top 10%

DM Patients ⓘ	Patients	Percentage
Your practice:	46	7%
Overall EMRALD:	12,345	10%
DM Patients with IHD		
Your practice:	4	9%
Overall EMRALD:	2,253	18%
DM Patients with HTN		
Your practice:	36	78%
Overall EMRALD:	8,425	68%
Female DM Patients		
Your practice:	35	76%
Overall EMRALD:	5,699	46%
Average Age of DM Patients		
Your practice:	63 years	
Overall EMRALD:	65 years	

Past Performance ⓘ

Targets	May 25, 2013 Your Practice	May 25, 2013 Top 10% ⓘ
A1C tested in 6 M	98%	88%
A1C < 7.0%	48%	66%
BP tested in 6 M	61%	99%
BP < 130/80 mmHg	57%	67%
ACE/ARB if HTN	79%	90%
WT/BMI in 15 M	60%	97%
Lipids tested in 15 M	95%	95%
LDL < 2.0 mmol/L	53%	62%
Statin if age >50 years	74%	87%
ACR tested in 15 M	33%	82%
DM in CPP	99%	94%

Distribution of Gap Scores ⓘ Overall ▼ ⓘ Consecutive ▼ ⓘ

Bringing it Together: Compare Measures Across Groups

	Source	Clinic A	Clinic B	Clinic C	Clinic D	Clinic E
Were you satisfied with the choice of day for your last appointment?	patient survey					
Did the doctor spend enough time with you?	patient sruvey					
What percentage of smokers were counselled in last year?	EMR					
What percentage of patients on Coumadin have had an INR between 2-3 in the last two months?	EMR					
How many ER visits occurred for minor problems?	administrative data					
What percentage of admitted Pts. were seen in office within 7 days of discharge?	administrative data					

Bringing it Together: Aggregate Across Measures
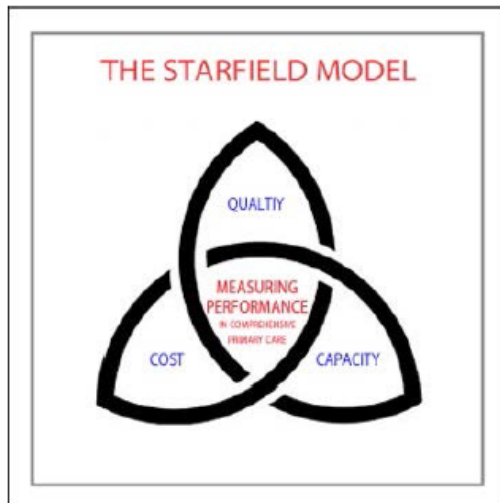
FHT Name	Quality	Capacity	Cost/Patient
Wittcott	659	53.6	$3394
Purcliffe	620	65.6	$3367
Shipdon	541	39.2	$4306
Ashbeth	620	29.9	$5591
Ipsbridge	354	61.9	$4063
Average	559	50.0	$4144
Target	TBD	> 53	< $3954

http://www.dorvalmedical.ca/wp-content/uploads/2013/11/The-Starfield-Model-A-Way-of-Measuring-Performance-in-Primary-Care.pdf

Bringing it Together: Return to Scenario

- What does the future look like?

    - conduct surveys of patient experience

    - extract EMR data

    - receive administrative data profiles

    - use data to set priorities

- This year will you:

    - use practice-based data to improve care?

    - receive feedback about how you compare with others?

    - participate in practice-based research?

Comments, Questions?